General

Guideline Title

A.S.P.E.N. clinical guidelines: nutrition support of hospitalized adult patients with obesity.

Bibliographic Source(s)

Choban P, Dickerson R, Malone A, Worthington P, Compher C, American Society for Parenteral and Enteral Nutrition. A.S.P.E.N. clinical guidelines: nutrition support of hospitalized adult patients with obesity. JPEN J Parenter Enteral Nutr. 2013 Nov;37(6):714-44. [97 references] PubMed

Guideline Status

This is the current release of the guideline.

Recommendations

Major Recommendations

Definitions for the strength of recommendations (Strong, Weak, Further research needed) and quality of evidence (High, Moderate, Low, Very Low) are provided at the end of the "Major Recommendations" field.

Do Clinical Outcomes Vary Across Levels of Obesity in Critically Ill or Hospitalized Non-Intensive Care Unit (ICU) Patients?

Critically ill patients with obesity experience more complications than patients with optimal body mass index (BMI) levels. Nutrition assessment and development of a nutrition support plan is recommended within 48 hours of ICU admission (Strong).

Evidence Grade: Low

All hospitalized patients, regardless of BMI, should be screened for nutrition risk within 48 hours of admission, with nutrition assessment for patients who are considered at risk (Strong).

Evidence Grade: Low

How Should Energy Requirements Be Determined in Obese Critically Ill or Hospitalized Non-ICU Patients?

In the critically ill obese patient, if indirect calorimetry is unavailable, energy requirements should be based on the Penn State University 2010 predictive equation or the modified Penn State University equation if the patient is over the age of 60 years (Strong).

Evidence Grade: High

In the hospitalized obese patient, if indirect calorimetry is unavailable and the Penn State University equations cannot be used, energy requirements may be based on the Mifflin–St Jeor equation using actual body weight (Weak).

Evidence Grade: Moderate

Are Clinical Outcomes Improved With Hypocaloric, High Protein Diets in Hospitalized Patients With Obesity?

Clinical outcomes are at least equivalent in patients supported with high protein hypocaloric feeding to those supported with high protein eucaloric feeding. A trial of hypocaloric high protein feeding is suggested in patients who do not have severe renal or hepatic dysfunction (Weak). Hypocaloric feeding may be started with 50% to 70% of estimated energy requirements or <14 kcal/kg actual weight. High protein feeding may be started with 1.2 g/kg actual weight or 2 to 2.5 g/kg ideal body weight, with adjustment of goal protein intake by the results of nitrogen balance studies.

Evidence Grade: Low

Hypocaloric low protein feedings are associated with unfavorable outcomes. Clinical vigilance for adequate protein provision is suggested in patients who do not have severe renal or hepatic dysfunction (Weak).

Evidence Grade: Low

In Obese Patients Who Have Had Malabsorptive or Restrictive Surgical Procedures for Weight Loss, What Micronutrients Should Be Evaluated?

Patients who have undergone sleeve gastrectomy, gastric bypass, or biliopancreatic diversion ± duodenal switch have increased risk of nutrient deficiency. In acutely ill hospitalized patients with history of these procedures, evaluation for evidence of depletion of iron, copper, zinc, selenium, thiamine, folate, and vitamins B_{12}, and D is suggested as well as repletion of deficiency states. (Weak).

Evidence Grade: Low

Definitions:

Note: The American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) clinical guidelines have adopted concepts of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) working group. A full description of the methodology is outlined in the A.S.P.E.N. guideline "Clinical guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: applying the GRADE system to development of A.S.P.E.N. clinical guidelines" (see the "Availability of Companion Documents" field).

Quality of Evidence

High	Further research is very unlikely to change confidence in the estimate of effect.
Moderate	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.
Low	Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.
Very Low	Any estimate of effect is very uncertain.

Strength of Recommendation

Strong	Net benefits outweigh harms
Weak	Tradeoffs for patient are important
Further Research Needed	Uncertain tradeoffs

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

- Obesity
- Critical illnesses and other conditions requiring nutritional support

Guideline Category

Evaluation

Risk Assessment

Screening

Treatment

Clinical Specialty

Critical Care

Family Practice

Internal Medicine

Nursing

Nutrition

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Dietitians

Hospitals

Nurses

Physician Assistants

Physicians

Guideline Objective(s)

To guide clinicians on the nutrition support care of hospitalized adult patients who have obesity

Target Population

Critically Ill or hospitalized non-intensive care unit (ICU) adult patients who have obesity

Interventions and Practices Considered

1. Nutrition assessment and development of a nutrition support plan within 48 hours of intensive care unit (ICU) admission
2. Determining energy requirements:
    - Use of indirect calorimetry
    - Use of Penn State University 2010 predictive equations or the modified Penn State equation
    - Use of the Mifflin–St Jeor equation using actual body weight
3. High protein hypocaloric feeding
4. Evaluation for evidence of depletion of iron, copper, zinc, selenium, thiamine, folate, and vitamins B_{12}, and D as well as repletion of deficiency states in patients who have undergone sleeve gastrectomy, gastric bypass, or biliopancreatic diversion ± duodenal switch

Major Outcomes Considered

- Morbidity and mortality
- Intensive care unit (ICU)/hospital length of stay
- Ventilator days
- Infection
- Other surgical complications
- Accuracy of energy requirement assessments
- Effectiveness of high protein diets
- Clinical value of micronutrient evaluations pre- and post-operatively

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

The questions addressed in the guideline are summarized in Table 1 of the original guideline document. With the assistance of a reference librarian a search was conducted in PubMed, EMBASE, and CINAHL on August 1, 2012, and updated May 2, 2013, using inclusion criteria of adult subjects, English language, randomized controlled trials, observational studies, and publications over the past 10 years. Search terms "obesity," "clinical outcomes," "mortality," "infection," "parenteral nutrition," and "enteral nutrition" were applied in various combinations for Questions 1 to 3. For Question 1, 31 articles met the inclusion criteria. For Question 2, 9 articles that described measures in hospitalized or clinical populations of obese patients and that reported data with accuracy and bias rates were included. For Question 3, the time limitation was relaxed to obtain all published information on the topic, yielding 8 articles. For Question 4, search terms of "copper," "zinc," "iron," "selenium," "vitamin deficiency," "nutrient deficiency," "gastric bypass," "biliopancreatic diversion," "vitamin D," and "bariatric surgery" were used in various combinations with a time limitation of the past 10 years, which yielded 22 articles.

Number of Source Documents

- Question 1: 31 articles
- Question 2: 9 articles
- Question 3: 8 articles
- Question 4: 22 articles

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Note: The American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) clinical guidelines have adopted concepts of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) working group. A full description of the methodology is outlined in the A.S.P.E.N. guideline "Clinical guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: applying the GRADE system to development of A.S.P.E.N. clinical guidelines" (see the "Availability of Companion Documents" field).

Quality of Evidence

High	Further research is very unlikely to change confidence in the estimate of effect.
Moderate	Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.
Low	Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate.
Very Low	Any estimate of effect is very uncertain.

Methods Used to Analyze the Evidence

Systematic Review with Evidence Tables

Description of the Methods Used to Analyze the Evidence

A systematic review of the best available evidence to answer a series of questions regarding management of nutrition support in patients with obesity was undertaken and evaluated using concepts adopted from the Grading of Recommendations Assessment, Development and Evaluation (GRADE) working group.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

These Clinical Guidelines were developed under the guidance of the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Board of Directors.

A.S.P.E.N. Clinical Guidelines has adopted concepts of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) working group. In a consensus process, the authors make recommendations for clinical practice that are based on the evidence review assessed against consideration of the risks and benefits to patients. Recommendations are graded as strong when the evidence is strong and/or the risk vs benefit analysis is strong. Weak recommendations may be based on weaker evidence and/or weaker trade-offs to the patient. When limited research is available to answer a question, the recommendation is for further research to be conducted.

Rating Scheme for the Strength of the Recommendations

Note: The American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) clinical guidelines have adopted concepts of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) working group. A full description of the methodology is outlined in the A.S.P.E.N. guideline "Clinical guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: applying the GRADE system to development of A.S.P.E.N. clinical guidelines" (see the "Availability of Companion Documents" field).

Strength of Recommendation

Strong	Net benefits outweigh harms
Weak	Tradeoffs for patient are important
Further Research Needed	Uncertain tradeoffs

Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

A consensus process, that includes consideration of the strength of the evidence together with the risks and benefits to the patient, was used to develop the clinical guideline recommendations prior to multiple levels of external and internal review and approval by the American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) Board of Directors on June 26, 2013.

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence identified and graded for each recommendation (see the "Major Recommendations" field).

The recommendations were based primarily on a comprehensive review of published reports that included randomized clinical trials and controlled and uncontrolled case series. In cases where the data did not appear conclusive, recommendations were based on the consensus opinion of the group in a process that considered the risk versus benefit to the patient.

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Appropriate nutrition support in adult hospitalized patients with obesity, which may lead to more favorable outcomes
- Avoidance of complications from overfeeding

Potential Harms

Not stated

Qualifying Statements

Qualifying Statements

American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.) clinical guidelines are based on general conclusions of health professionals

who, in developing such guidelines, have balanced potential benefits to be derived from a particular mode of medical therapy against certain risks inherent with such therapy. However, the professional judgment of the attending health professional is the primary component of quality medical care. Because guidelines cannot account for every variation in circumstances, the practitioner must always exercise professional judgment in their application. These clinical guidelines are intended to supplement, but not replace, professional training and judgment.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Staying Healthy

IOM Domain

Effectiveness

Identifying Information and Availability

Bibliographic Source(s)

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Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

2013 Nov

Guideline Developer(s)

American Society for Parenteral and Enteral Nutrition - Professional Association

Source(s) of Funding

American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.)

Guideline Committee

Not stated

Composition of Group That Authored the Guideline

Authors: Patricia Choban, MD; Roland Dickerson, PharmD, BCNSP; Ainsley Malone, MS, RD, CNSC; Patricia Worthington, MSN, RN; Charlene Compher, PhD, RD, CNSC, LDN, FADA, FASPEN; American Society for Parenteral and Enteral Nutrition

Financial Disclosures/Conflicts of Interest

There were no conflicts of interest relative to this guideline.

Guideline Status

This is the current release of the guideline.

Guideline Availability

Electronic copies: Available from the Journal of Parenteral and Enteral Nutrition Web site .

Availability of Companion Documents

The following are available:

- Schiavone PA, Piccolo K, Compher C. Application of the A.S.P.E.N. Clinical Guideline for Nutrition Support of Hospitalized Adult Patients with Obesity: a case study of home parenteral nutrition. Nutr Clin Pract. 2013 Dec 19. [Epub ahead of print]. Electronic copies: Available to subscribers from the Nutrition in Clinical Practice Web site .
- Clinical guidelines for the use of parenteral and enteral nutrition in adult and pediatric patients: applying the GRADE system to development of A.S.P.E.N. clinical guidelines. American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.); 2012 Jan. 5 p. Electronic copies: Available from the Journal of Parenteral and Enteral Nutrition Web site .

Patient Resources

None available

NGC Status

This NGC summary was completed by ECRI Institute on December 20, 2013. The information was verified by the guideline developer on January 6, 2014.

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